

REMARKS

Claims 24 and 25 were added to better define the invention and include elements from former claim 2.

Claims 2 and 7 stand rejected under 35 U.S.C. §112 as indefinite. Claim 7 was cancelled. Claim 2 was amended to correct any ambiguities that may have existed in the original claim. Therefore, Applicants respectfully request that the rejection to claims 2 and 7 be withdrawn.

Claims 1-8 and 14-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 6,506,198 to Amano ("Amano"). Applicants respectfully traverse the rejection. However, to expedite prosecution in the present application, claim 1 has been amended to better define the invention.

Amano discloses a corneal surgery apparatus. The apparatus disclosed in Amano is a microkeratome, usable in LASIK procedures (Col. 3, lines 40-41; Figs. 1-2, numbers 1, 2, and 21a; Col. 1, lines 11-22). The microkeratome incises a corneal portion with a thickness of 150 micrometers, the corneal portion including portions of the corneal stroma and the epithelium (Col. 1, lines 12-17; Col. 5, lines 32-36; Fig. 2, numbers 20 and 21a). To do this, the microkeratome uses either a metal blade having a blade edge of stainless steel, steel, or the like or a mineral blade having a blade edge of diamond, sapphire, or the like (Col. 4, lines 55-57; Fig. 2, numbers 20, 21a). Because of differences in corneal curvature of patients' eyes, the prior art provided for different sized suction rings for use with different sized eyes and for height adjustment of the suction ring (Col. 1, lines 38-48). In response, the Amano invention provides a microkeratome that is capable of forming a flap of uniform diameter regardless of differences in corneal curvature (Col. 1, line 67-Col. 2, line 2; Col. 5, lines 29-31).

Conversely, amended claim 1 recites "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma." Amano does not

disclose or suggest a device suitable for either separating the epithelial layer from the corneal stroma or preserving a separated epithelial layer as a disk without rupturing and without substantial epithelial cell loss.

The Office Action refers to Amano Figs. 1 and 2, numbers 1 and 21a, as anticipating claim 1. As noted above, with references to the Amano specification, these figures illustrate a LASIK microkeratome that incises portions of the epithelium **and corneal stroma**, at a thickness of 150 microns. As a result, the type of incision disclosed by Amano does not separate the epithelial layer from the corneal stroma. Further, the Amano reference does not disclose or suggest any other type of incision besides a 150 micron LASIK microkeratome incision. Thus, Amano does not disclose or suggest a device capable of separating the epithelial layer from the corneal stroma. Therefore, for at least these reasons, Applicants respectfully request that the rejection to claim 1 be withdrawn.

Moreover, with regard to preserving a separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss, the Amano reference does not disclose or suggest a separated epithelial layer disk, much less preserving such a disk without rupturing or substantial epithelial cell loss. Therefore, for at least these reasons, Applicants respectfully request that the rejection to claim 1 be withdrawn.

Furthermore, claims 3 and 4 recite that "said separator is not sharp enough to excise corneal tissue during operation." As noted above, Amano discloses a microkeratome that incises a corneal portion that includes corneal stroma. In fact, not only is the Amano microkeratome sharp enough to excise corneal tissue, but in all embodiments disclosed or suggested, Amano actually excises corneal tissue. Therefore, for at least these reasons, Applicants respectfully request that the rejection to claims 3 and 4 be withdrawn.

Next, claims 5 and 6 recite that "a travel of the separator is controlled to produce an epithelial disk hinged to the border of separation." As noted above, Amano does not disclose or suggest the forming of an epithelial disk, much less

one that is hinged to the border of separation. Further, the layers of Amano are completely cut off. Therefore, for at least these reasons, Applicants respectfully request that the rejection to claims 5 and 6 be withdrawn.

In addition, claims 2-8 and 14-15 depend, directly or indirectly, from claim 1 and include all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection of claims 2-8 and 14-15 be withdrawn.

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Amano in view of U.S. Pat. No. 6,126,668 to Bair et al. ("Bair"). Applicants respectfully traverse the rejection. Neither Amano nor Bair, alone or in combination, disclose "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma," which is recited in claim 1. Claim 9 depends from claim 1 and includes all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection to claim 9 also be withdrawn.

Claims 10-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Amano in view of Bair and in further view of U.S. Pat. No. 4,665,914 to Tanne ("Tanne"). Applicants respectfully traverse the rejection. Neither Amano nor Bair nor Tanne, alone or in combination, disclose "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma," which is recited in claim 1. Claims 10-12 depend indirectly from claim 1 and include all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection to claims 10-12 also be withdrawn.

Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Amano in view of U.S. Pat. No. 5,133,726 to Ruiz et al. ("Ruiz"). Applicants respectfully traverse the rejection. Neither Amano nor Ruiz, alone or in combination, disclose "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma," which is recited in claim 1. Claim 13 depends from claim 1 and includes all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection to claim 13 also be withdrawn.

Claims 16-17 and 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Amano in view of Ruiz and in further view of U.S. Pat. No. 4,659,584 to Schilk ("Schilk"). Applicants respectfully traverse the rejection. Neither Amano nor Ruiz nor Schilk, alone or in combination, disclose "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma," which is recited in claim 1. Claims 16-17 and 21-23 depend from claim 1, directly or indirectly, and include all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection to claims 16-17 and 21-23 also be withdrawn.

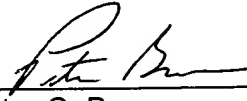
Moreover, Claim 16 recites the device of claim 2 "further including a rotating drum and where the separated epithelial disk is rolled on the drum." The Office Action cites Schilk, Col. 2, lines 1-15 and Fig. 5, as directed to the rotating drum. Schilk is directed to the manufacture of eye rods for use in the eye (Col. 1, lines 6-11). Schilk does not disclose or suggest a separator, surgery involving a separator, or rolling a separated epithelial disk on a rotating drum. Looking to

Col. 2, lines 1-15 and Fig. 5, a "rotating drum" usable in eye surgery is not disclosed. Specifically, the "rotation and transporting system" disclosed by Schilk is used in the manufacture of eye rods. Schilk does not disclose a rotating drum for use in any eye procedure, much less one in which a separated epithelial disk is rolled on a rotating drum. Therefore, for at least these reasons, Applicants respectfully request that the rejection to claim 16 be withdrawn. Claims 17 and 21-23 depend from claim 16, directly or indirectly, and include all of the features of claim 16, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 16, Applicants respectfully request that the rejection to claims 17 and 21-23 also be withdrawn.

Claims 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Amano in view of Schilk and in further view of U.S. Pat. No. 5,462,739 to Dan et al. ("Dan"). Applicants respectfully traverse the rejection. Neither Amano nor Schilk nor Dan, alone or in combination, disclose "a separator, where said device can preserve the separated epithelial layer as a disk without rupturing said disk and without substantial epithelial cell loss and where said device is suitable for separating the epithelial layer from the corneal stroma," which is recited in claim 1. Claims 18-20 depend from claim 1 and include all of the features of claim 1, plus additional features. Therefore, for at least the reasons discussed above with respect to claim 1, Applicants respectfully request that the rejection to claims 18-20 also be withdrawn.

For all of the above reasons, Applicants respectfully request reconsideration and allowance of the present application. The Examiner is invited to contact the undersigned attorney at (312) 222-8101 if there are any outstanding issues that could be resolved through a telephone conference.

Respectfully submitted,



Peter C. Breen
Registration No. 47,441
Attorney for Applicants